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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional): MEMS-0160-US

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on September 19, 2006

Signature

Typed or printed name Mark E. Olds

Application Number	Filed
09/895,152	2 Jul 2001
First Named Inventor	
BROWN et al.	
Art Unit	**Examiner**
1756	CHACKO DAVIS, DABORAH

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.

I am the

- [ ] applicant/inventor.
- [ ] assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)
- [X] attorney or agent of record. Registration number 48507
- [ ] attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34.

Signature

Mark E. Olds
Typed or printed name

1.703.621.7140
Telephone number

9/19/06
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

[X] *Total of ( ) forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: **Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Docket No.: MEMS-0160-US
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): BROWN, et al.	Conf. No.:
Application No.: 09/895,152	Art Unit: 1756
Filed: 2 Jul 2001	Examiner: CHACKO DAVIS, DABORAH
Title: HIGH QUALITY LITHOGRAPHIC PROCESSING	

REASONS FOR PRE-APPEAL BRIEF REQUEST FOR REVIEW

MS AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In addition to the Notice of Appeal which is being concurrently filed, Applicants respectfully request a Pre-Appeal Brief Conference to consider the issues raised in the Office Action dated April 19, 2006, that finally rejected claims 1-4, 6-25, 27-28 and 36-42.

A. Claim Rejections under 35 U.S.C. § 102

The Examiner has finally rejected: claims 1-4, 6-25, 27-28 and 36-42 under 35 U.S.C. § 102(e) as allegedly being anticipated by Feldman et al., "Feldman" (U.S. Patent No. 6,071,652).

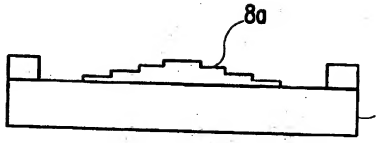
B. The Feldman Patent neither explicitly nor inherently teaches handling a packet received from an external network in accordance with the claimed policy profile as recited in independent claims 1, 8, 23 and 36.

It is respectfully submitted that Feldman does not explicitly or inherently disclose the method of forming a mask as claimed in claim 1. Specifically, Feldman does not teach "each pass is offset such that no two passes write along the same path", as recited in claim 1. In contrast to

the Examiner's interpretation the Feldman teaches writing multiple passes along the same path and recites the following in 4, lines 25-58 (with emphasis added).

> FIG. 1a illustrates a structure that may be processed into a gray scale mask in accordance with the present invention. This structure includes a transparent substrate 6, a layer 8 of a material whose absorption of radiation, typically in the ultraviolet region, increases with the thickness thereof, such as metal or amorphous silica, and a photoresist layer 10. The terms transmissive and absorbing refer to the wavelength used during photoresist exposure using the mask, discussed in detail below.
>
> A desired pattern is produced, in accordance with the present invention, in the photoresist layer 10 in accordance with techniques previously used for making diffractive optical elements in resist. Such techniques include creating a continuous diffractive optical element using direct writing with a laser or a multiple discrete level binary optics using plural binary masks. The pattern in the photoresist layer 10 is then transferred to the layer 8 of absorptive material. This can be achieved through ion-milling, reactive ion etching, chemical etching, or other techniques.
>
> The gray scale mask of the present invention may be formed by patterning the photoresist layer 10 with a first mask, transferring this pattern into the absorptive material 8, depositing another photoresist layer, patterning this layer with a second mask, transferring this pattern into the absorptive material, until the desired number of levels is reached. Alternately, the gray scale mask of the present invention may be made using deposition lift off in which the photoresist is first deposited on the substrate 6, the photoresist layer 10 is then patterned with a first mask, the material layer 8 is then deposited on the patterned photoresist layer 10. The photoresist layer 10 is then dissolved, lifting off material layer 8 where the material layer is deposited over the photoresist, leaving the material in the other regions. Another photoresist layer is then added over the remaining material and patterned with a second mask. **Another material layer is then deposited on the photoresist layer patterned with the second mask. This process is repeated until the desired number of levels is formed.**

Additionally, when this section is taken in conjunction with the cited Fig 1b, reference 8a (illustrated below), it is clear that Feldman teaches to write multiple passes along the **same path**, in contradiction to the Examiner's interpretation.



Specifically, as can be seen from the illustration above showing the stepped levels and the related description (i.e., multiple masks are used to create the multiple levels), it is clear that Feldman teaches to overlay masks to that would "write" on the exact same areas to create the stepped levels that are illustrated.

Regarding claim 8, Applicant respectfully submits that "reflow" process taught in Feldman and relied upon by the Examiner is expressly taught away from in Applicant's disclosure (see, e.g. par. 0036 cited below with emphasis added):

> [0036] There are several techniques to accomplish the heating process solution; the appropriate technique may depend on the initial surface structure. ..... The objective in practicing this solution is to not melt or reflow the bulk of the photosensitive material but rather to smooth surface irregularities without changing surface contour.

The Examiner indicates that Feldman allegedly shows a reflow in the photoresist to eliminate roughness, wherein the reflow is performed to eliminate obvious discontinuities. However, Feldman in actuality states (emphasis added):

> When forming a refractive element using a gray scale mask that does not itself have a continuous profile, such as the gray scale mask formed in accordance with the present invention, it may be desirable to reflow the photoresist before the final step 38 of forming the element. This reflow would involve only heating the photoresist up by a small amount such that any obvious discontinuities arising

from the step wise nature of the gray scale mask will be eliminated (Feldman et al., col. 8, ll. 7-14).

As clearly stated in Feldman in the above-referenced section, the reflow process is used to **change the surface contour of the surface**, by eliminating the "step wise" nature of the mask and changing it to a continuous profile. This is in direct opposition to the teachings in the present application, which is expressly noted in paragraph [0036], for example.

Accordingly, Feldman fails to show, suggest, or teach reducing general roughness error. Claim 8 states: "melting at least a portion of the photosensitive material, whereby general roughness error is reduced". Further, as noted in Applicant's specification in paragraph [0014], the general roughness error is "caused by the slight variations in the dose of the writing tool, usually an electron beam (e-beam) or laser. In the case of the half tone process, the chosen pixel shape scheme may cause this error. The period of oscillation for the general roughness error is typically on the order of 10 microns."

The Examiner notes in the "Response to Arguments" in the Final Rejection on Page 4, that "the general roughness error is typically in the order of 10 microns" is not recited in the claims and limitations from the specification are not read into the claims. The specific limitation of 10 microns is not necessary to be "read into" the claims, however, the term general roughness does need to be interpreted in light of the specification. Further, as clearly indicated in the specification, the term general roughness **does not** refer to changing surface contour as taught by Feldman.

The remaining independent claims (i.e., claims 23 and 36) recite related subject matter to the above-identified independent claims, and are therefore allowable for reasons similar to those

given above. Accordingly, Applicant respectfully submits that Feldman does not teach the identical invention as claimed as is required by 35 U.S.C. § 102 and does not anticipate Applicant's claimed combinations as alleged.

C. Dependent Claims 2-4, 6-7, 9-22, 24-25, 27-28 and 37-42

Applicants also respectfully submit that dependent claims 2-4, 6-7, 9-22, 24-25, 27-28 and 37-42, which all depend from either independent claims 1, 8, 23 or 36 are patentable for at least the same reasons as the independent claims from which they depend.

D. Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number of (703) 621-7140 x 103, to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 50-2838 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Dated: September 19, 2006

Respectfully submitted,

By _____
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